How to recommend charging piles based on charging intention?

Such methods provide good technical supports for charging piles recommendation [15, 16]. The state of charging piles and EVs are changing all the time. The recommendation method based on charging intention takes charging needs of surrounding users into account to make a more accurate recommendation list for the served user.

How to improve the utilization rate of charging pile resources?

The investment cost of charging stations is high and the equipment utilization rate is low, resulting in a waste of charging resources. The application of new charging piles, charging robots and other automatic charging devices with automatic charging functions is one of the solutions to improve the utilization rate of charging pile resources.

What are new energy vehicle charging piles?

Currently,new energy vehicle charging piles are manual charging piles. Due to the fixed location of the charging piles and the limited length of the charging cables,manual charging piles can only provide charging services for the vehicles to be charged in the nearest two parking spaces at most.

Why is charging pile a critical resource?

The same pile interface can only provide charging for one EV at a time,so charging pile is a mutually exclusive critical resource . Guiding charging behavior of users correctly and reasonably plays an important role in efficiently utilizing charging resources,relieving traffic pressure,and improving user experience.

Which charging pile should a user choose?

The charging pile with the shortest distanceis recommended for the user. Distance between EVs and charging piles The minimum distance For another recommendation method,we took the distance and the total historical charging times into consideration. We can get users' preference for each charging pile through formula (3).

What is a 'few piles to many vehicles' charging scenario?

In Ref. , Mouli et al. designs a charging scenario of "few piles to many vehicles', where a single charging pile can provide charging services for vehicles to be charged in multiple charging parking spaces through multiplexed charging lines.

The world requires reaching net-zero carbon emissions by 2050 with a greener environment and considerable economic development. 1, 2 This can be achieved only through ...

In this paper, a method based on support vector machine (SVM) is proposed to detect electricity stealing behavior of charging piles.

This paper focuses on energy storage scheduling and develops a bi-level optimization model to determine the optimal number of charging piles for public bus CSs with ...

Degradation stage detection and life prediction are important for battery health management and safe reuse. This study first proposes a method of detecting whether a ...

The safe operation of battery-power method depends onprecise state-of-charge (SOC) assessment while being a viable choice for energy storage solutions [4]. If LIBs are ...

Data Augmentation Based Anomaly Data Detection for Charging Piles. ... 78.73% and 88.69% over tenfold cross-validation as well as 73.14%, 62.67% and 83.61% over ...

Battery sensor data collection and transmission are essential for battery management systems (BMS). Since inaccurate battery data brought on by sensor faults, ...

Most of the review papers in energy storage highlight these technologies in details, however; there remains limited information on the real life application of these ...

By analyzing the load index data, it can be concluded that EVs have the same charging and discharging properties as energy storage, which can avoid charging electric ...

The study considers five key performance and usage parameters for energy storage: (1) round-trip efficiency, (2) component life span, (3) source of electricity for charging the store, (4) end ...

In (Li et al., 2020), A control strategy for energy storage system is proposed, The strategy takes the charge-discharge balance as the criterion, considers the system ...

For this purpose, in the optimal charging station structure, a storage system was considered to store electric energy during peak blackout hours, and this energy was used ...

When photovoltaic penetration is between 9% and 73%, energy storage can be carried out. Take 73% photovoltaic penetration as an example to draw a schematic diagram, ...

The study reveals that utilizing MCS services is a cost-effective technology for charging facilities owners to improve the utilization rate of charging equipment and for the ...

Most TEA starts by developing a cost model. In general, the life cycle cost (LCC) of an energy storage system includes the total capital cost (TCC), the replacement cost, the ...

Solar energy is the most feasible source to charge the ground manually. ... Energy storage pile foundations are being developed for storing renewable energy by utilizing ...

A ?1 to N? automatic charging pile is proposed, which enables a single automatic charging pile to provide self-consistent charging and energy replenishment services ...

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